

A METHOD AND CIRCUITRY FOR HIGH POWER AMPLIFIERS WITH
VOLTAGE CONVERSION TO AVOID PERFORMANCE DEGRADATION,
SYSTEM SHUTDOWN AND PERMANENT DAMAGE
IN CASE OF WORST CASE DATA PATTERN

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ABSTRACT OF THE DISCLOSURE

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A power amplification system for wireless communications monitors wireless signal sequences for worst case or problematic data patterns likely to cause the output voltage of a voltage converter supplying the power amplifier to drop. The signal sequences, which may be data within a single timeslot or data packet or across several timeslots or data packets, are detected by monitoring data patterns, either alone or in conjunction with monitoring voltage, current, or a combination of voltage and current drawn by the power amplifier. Upon detection of triggering signal sequences, the output power level is reduced, either digitally by dropping the output power one or more power levels or in an analog fashion by reducing reference voltages. Monitoring and control units may be included within the voltage converter, the power amplifier, a baseband modulator, and/or a transmission line-up unit.